REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested. Entry of this Amendment under Rule 116 is merited as it raises no new issues and requires no further search.

Claims 2-22 are pending in the application. Claims 2-21 are unchanged notwithstanding the Examiner's modified obviousness rejection. Claim 22 has been added to provide Applicants with the scope of protection to which they are believed entitled. New claim 22 finds solid support in the original specification, e.g., at page 15, line 23 and page 11, lines 12-16. No new matter has been introduced through the foregoing amendments.

The finality of the Office Action mailed August 23, 2005 is deemed premature and should be withdrawn. In particular, the Examiner's new ground of rejection raised against claim 8 was not necessitated by Applicant's amendments.

Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in *37 CFR 1.97(c)* with the fee set forth in *37 CFR 1.17(p)*. *See MPEP*, section 706.07(a) (emphasis added).

In this particular case, claim 8 was rewritten, by the June 9, 2005 Amendment, in independent form to include all limitations of base claim 1 without otherwise touching the merits. Thus, the scope of claim 8 was unchanged by the June 9, 2005 Amendment. This means, the rejection of claim 8 as manifested in the first Office Action mailed February 9, 2005 could have been reapplied (had the rejection been proper) without requiring the new ground of rejection. Apparently, the withdrawal of the February 9, 2005 Office Action's rejection of claim 8 and the August 23, 2005 Office Action's new ground of rejection against claim 8 were not necessitated by

Applicants' rewriting of claim 8 in independent form. Therefore, the August 23, 2005 Office Action should not be made final.

In addition, the new ground of rejection is based on *Toshiba* (JP 11-274557) which is not information submitted in an information disclosure statement filed during the period set forth in *37 CFR 1.97(c)* with the fee set forth in *37 CFR 1.17(p)*. Therefore, the August 23, 2005 Office Action should not be made final.

For the above advanced reasons, withdrawal of the finality of the August 23, 2005 Office Action is believed appropriate and, therefore, respectfully requested.

The *35 U.S.C. 103(a)* rejection of claims 2-21 as being obvious over *Orita* in view of *Toshiba* and *Lee* is traversed, because the references singly or in combination fail to disclose, teach or suggest all limitations of the rejected claims, especially step (c') of independent claim 8 and step (d) of independent claim 11.

With respect to independent claim 8, step (c') is performed on **'the nitride semiconductor crystal film'** in order to improve the surface condition of the nitride semiconductor crystal film, after the oxide removal process of step (c).

Step (c') is performed **not on a p-type or p-doped GaN layer but on the nitride semiconductor crystal film treated by the step (c).** According to the claimed invention, a p-doped or n-doped GaN layer in the light emitting structure is formed only after the heat treatment of the step (c'), i.e., in step (d).

However, ***Toshiba's* annealing process relied upon by the Examiner** is for another purpose, that is, for activating the p-type dopants of **the p-type GaN layer 14** and prevent deterioration of **the n-type GaN layer 13.** (See abstract and paragraphs [0009] and [0020]). The Examiner is encouraged to obtain an independent and accurate English translation of *Toshiba* to

confirm Applicants' understanding of the reference.

In other words, *Toshiba's* annealing process is similar to *Nakamura's* annealing process (applied in the previous Office Action and now withdrawn). Therefore, *Toshiba's* annealing process is totally different from the heat treatment of step (c') in claim 8.

Further, *Toshiba* does not mention the surface condition of the nitride semiconductor crystal film treated by an oxide removal process, such as the step (c) at all. In addition, *Toshiba* never teaches or suggests to perform the heat treatment on the nitride semiconductor crystal film after the oxide removal process (step c) as claimed in claim 8.

Accordingly , Applicants respectfully submit that the Examiner's proposed combination of *Orita/Lee* and *Toshiba* would fail to teach or disclose step (c') of independent claim 8, because the annealing step of *Toshiba* is distinctly different from claimed step (c') of independent claim 8. Claim 8 is thus patentable over the applied references.

Claims 2-7, 9-10 and new claim 22 11-17 depend from claim 8, and are considered patentable at least for the reason advanced with respect to claim 8.

Claim 22 is also patentable on its own merit since this claim recites a feature neither disclosed, taught nor suggested by the applied art. In particular, in the invention of claim 22, the nitride semiconductor crystal film is an un-doped buffer layer. When read together with independent claim 8, claim 22 requires that step (c') be performed on a un-doped buffer layer. *Toshiba*, as discussed above, teaches performing an annealing process on the doped layers 13, 14. Thus, the annealing step of *Toshiba* is distinctly different from step (c') of claim 22. Claim 22 is thus patentable over the applied references.

With respect to independent claim 11, the applied references singly or in combination clearly fail to teach or suggest claimed step (d) which is performed before step (e). Note, the last

limitation of independent claim 11 that steps (a) through (e) are performed in the recited order. In other words, independent claim 11 requires that the heat treatment of the nitride semiconductor crystal film in step (d) be performed before forming a first conductive nitride semiconductor layer, an active layer, and a second conductive nitride semiconductor layer on the nitride semiconductor crystal film in step (e).

Toshiba teaches an annealing process which is beneficial for p-type doped and n-type doped GaN layers 13, 14. A person of ordinary skill in the art learning of the teaching of *Toshiba* would at once realize that the *Toshiba* annealing process should be performed, if at all, only after p-type doped and n-type doped GaN layers of *Orita* have been formed. As a result, the person of ordinary skill in the art would have been motivated, if at all, to perform the *Toshiba* annealing process only after p-type doped layer 75 and n-type doped layer 73 (FIGs. 7A-7C) have been formed by the *Orita* process, i.e., only after the *Orita* equivalent of claimed step (e) has been completed. Such combined method would at least include claimed steps (d) and (e) in the reverse order, and therefore, would fail to teach or disclose all limitations of independent claim 11.

Claim 11 is thus patentable over the applied references. Claims 12-21 depend from claim 11, and are considered patentable at least for the reason advanced with respect to claim 11.

At least claim 21 is also patentable on its own merit since this claim recites a feature neither disclosed, taught nor suggested by the applied art. In particular, in the invention of claim 21, the heat treatment process of step d) is performed in an atmosphere of at least one selected from the group consisting of hydrogen and ammonia. The reference being relied upon for the claimed heat treatment, i.e., *Toshiba*, teaches, at best, only a nitrogen atmosphere. *See* English Abstract of *Toshiba*, the last line. The rejection of claim 21 is therefore inappropriate and should be withdrawn.

Accordingly, Applicants respectfully submit that all claims in the present application are

now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under *37 C.F.R. 1.136* is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,
LOWE HAUPTMAN & BERNER, LLP

Benjamin J. Hauptman
Registration No. 29,310

USPTO Customer No. 22429
1700 Diagonal Road, Suite 310
Alexandria, VA 22314
(703) 684-1111 BJH/KL/klb
(703) 518-5499 Facsimile
Date: November 23, 2005

CERTIFICATION OF FACSIMILE TRANSMISSION
I HEREBY CERTIFY THAT THIS PAPER IS BEING FACSIMILE TRANSMITTED TO THE PATENT AND TRADEMARK OFFICE ON THE DATE SHOWN BELOW

Kindra Bryant
TYPE OR PRINT NAME OF PERSON SIGNING CERTIFICATION

SIGNATURE November 23, 2005 **DATE**

571-273-8300
FACSIMILE NUMBER